

OPINIONS AND DECLARATIONS RENDERED BY THE INTER- NATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

Edited by

FRANCIS HEMMING, C.M.G., C.B.E.

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OPINION 564

Suppression under the Plenary Powers of the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, and designation under the same Powers of *Palaemon adspersus* Rathke, 1837, to be the type species of the genus *Palaemon* Weber, 1795, and matters incidental thereto (Class Crustacea, Order Decapoda)

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INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

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SUPPRESSION UNDER THE PLENARY POWERS OF THE SPECIFIC NAME "SQUILLA" LINNAEUS, 1758, AS PUBLISHED IN THE COMBINATION "CANCER SQUILLA" AND DESIGNATION UNDER THE SAME POWERS OF "PALAEMON ADSPERSUS" RATHKE, 1837, TO BE THE TYPE SPECIES OF THE GENUS "PALAEMON" WEBER, 1795, AND MATTERS INCIDENTAL THERE TO (CLASS CRUSTACEA, ORDER DECAPODA)

RULING : (1) The following action is hereby taken under the Plenary Powers :—

(a) The under-mentioned specific names are hereby suppressed for the purposes of the Law of Priority but not for those of the Law of Homonymy :—

- (i) *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla* ;
- (ii) *communis* Anselijn, 1826, as published in the combination *Palaemon communis* ;
- (iii) *adpersus* Tilesius, 1818, as published in the combination *Penaeus adpersus* ;
- (iv) *punctatissimus* Bosc, [1801–1802], as published in the combination *Penaeus punctatissimus*.

(b) It is hereby directed that the nominal genus *Palaemon* Weber, 1795, shall be cited as having as its type species the nominal species *Palaemon adpersus* Rathke, 1837, and not the nominal species *Cancer squilla* Linnaeus, 1758, the specific name of which has been suppressed under the Plenary Powers in (1)(a)(i) above.

(2) The under-mentioned generic names are hereby placed on the *Official List of Generic Names in Zoology* with the Name Numbers severally specified below :—

- (a) *Palaemon* Weber, 1795 (gender : masculine) (type species, by direction given under the Plenary Powers in (1)(b) above : *Palaemon adpersus* Rathke, 1837) (Name No. 1361) ;
- (b) *Leander* Desmarest (E.), 1849 (gender : masculine) (type species, by monotypy : *Leander erraticus* Desmarest (E.), 1849) (Name No. 1362) ;
- (c) *Macrobrachium* Bate, 1868 (gender : neuter) (type species, by selection by Fowler (1912) : *Macrobrachium americanum* Bate, 1868) (Name No. 1363).

(3) The under-mentioned specific names are hereby placed on the *Official List of Specific Names in Zoology* with the Name Numbers severally specified below :—

- (a) *adpersus* Rathke, 1837, as published in the combination *Palaemon adpersus* (specific name of type species of *Palaemon* Weber, 1795) (Name No. 1650) ;
- (b) *tenuicornis* Say, 1818, as published in the combination *Palaemon tenuicornis* (Name No. 1651) ;

- (c) *americanum* Bate, 1868, as published in the combination *Macrobrachium americanum* Bate (specific name of type species of *Macrobrachium* Bate, 1868) (Name No. 1652) ;
- (d) *elegans* Rathke, 1837, as published in the combination *Palaemon elegans* (Name No. 1653) ;
- (e) *locusta* Linnaeus, 1758, as published in the combination *Cancer locusta* (Name No. 1654).

(4) The under-mentioned generic names are hereby placed on the *Official Index of Rejected and Invalid Generic Names in Zoology* with the Name Numbers severally specified below :—

- (a) *Palaemon* Fabricius (J.C.), 1798 (a junior homonym of, and a junior objective synonym of, *Palaemon* Weber, 1795) (Name No. 1270) ;
- (b) *Palemon* Duméril, [1805] (an Invalid Emendation of *Palaemon* Fabricius (J.C.), 1798) (Name No. 1271) ;

(5) The under-mentioned specific names are hereby placed on the *Official Index of Rejected and Invalid Specific Names in Zoology* with the Name Numbers severally specified below :—

- (a) *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, as suppressed under the Plenary Powers in (1)(a)(i) above (Name No. 588) ;
- (b) *communis* Anslijn, 1826, as published in the combination *Palaemon communis*, as suppressed under the Plenary Powers in (1)(a)(ii) above (Name No. 589) ;
- (c) *adpersus* Tilesius, 1818, as published in the combination *Penaeus adpersus*, as suppressed under the Plenary Powers in (1)(a)(iii) above (Name No. 590) ;
- (d) *punctatissimus* Bosc, [1802–1803], as published in the combination *Penaeus punctatissimus*, as suppressed under the Plenary Powers in (1)(a)(iv) above (Name No. 591) ;
- (e) *locusta* Fabricius (J.C.), 1781, as published in the combination *Astacus locusta* (a junior secondary homonym in the genus *Astacus* Fabricius (J.C.), 1775, of *locusta* Linnaeus, 1758, as published in the combination *Cancer locusta*, through the transfer of the species so named to the genus *Astacus* by Pennant (1777) (Name No. 592).

(6) The under-mentioned family-group name is hereby placed on the *Official List of Family-Group Names in Zoology* with the Name Number 268 :—

PALAEEMONIDAE (correction of PALEMONIA) Rafinesque, 1815 (type genus : *Palaemon* Weber, 1795).

(7) The under-mentioned family-group names are hereby placed on the *Official Index of Rejected and Invalid Family-Group Names in Zoology* with the Name Numbers severally specified below :—

- (a) PALEMONIA Rafinesque, 1815 (type genus : *Palaemon* Weber, 1795) (an Invalid Original Spelling for PALAEEMONIDAE) (Name No. 298) ;
- (b) PALEMONIDAE Randall, 1839 (an Erroneous Subsequent Spelling for PALAEEMONIDAE) (Name No. 299).

I. STATEMENT OF THE CASE

In January 1950 Mr. Robert Gurney (*Oxford*) approached the Office of the Commission on the question of the interpretation of the nominal species *Cancer squilla* Linnaeus, 1758, at that time recently advanced by Dr. L. B. Holthuis (*Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands*). Mr. Gurney was then advised in the first instance to confer direct with Dr. Holthuis. This led on 5th April 1950 to the submission by Dr. Holthuis of a comprehensive memorandum in which full particulars were given as to the interpretation of the foregoing nominal species adopted by specialists in different parts of the world, and various possible solutions of the difficulties which had arisen were discussed; at the same time a discussion was given as to the relationship to one another of the generic names *Leander* Desmarest, *Palaemon* Weber and *Macrobrachium* Bate, a subject closely allied with that involved in the interpretation of the nominal species *Cancer squilla* owing to the fact that that species was the type species of the genus *Palaemon* Weber. No definite proposals were placed before the Commission at that time, but on 25th October 1951 Dr. Holthuis submitted a formal application for the suppression under the Plenary Powers of the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*. This was followed up on 11th November 1952 with an application in which the Commission was asked to use its Plenary Powers for the purpose of providing a firm basis for the interpretation of the generic name *Palaemon* Weber. Following the close of the Fourteenth International Congress of Zoology, Copenhagen, 1953, consideration was given to the family-group-name problems involved in this case, and supplementary proposals on this subject were submitted by Dr. Holthuis on 23rd September 1954. Towards the close of 1956 the question of the form of the application to be submitted was re-examined, and it was decided that it would serve the convenience of the Commission if the original plan for treating both of the subjects involved as forming a single, though composite, problem were to be reverted to. This involved a certain recasting of the proposed application; this was completed by the early days of 1957, Dr. Holthuis, who at this time was temporarily absent from Europe, being engaged on work at the Caraibisch Marien-Biologisch Instituut, Curacao, finally placing the following application before the Commission for consideration on 28th January 1957.

Proposed use of the Plenary Powers (a) to suppress the specific name “*squilla*” Linnaeus, 1758, as published in the combination “*Cancer squilla*”, and (b) to substitute the name “*Palaemon adspersus*” Rathke, 1837, as the name to be cited as that of the type species of the genus “*Palaemon*” Weber, 1795 (Class Crustacea, Order Decapoda)

By L. B. HOLTHUIS

(*Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands*)

Introductory

The application now submitted to the International Commission on Zoological Nomenclature deals with two distinct subjects which, however, are closely connected with one another through the fact that the problem created by the name *Cancer squilla* Linnaeus, 1758, enters into each.

2. The first of these problems arises through the confusion which has developed through the different interpretations which have been given to the

foregoing nominal species. This subject is dealt with in Part 1 below, where I conclude that the only practicable way of putting an end to confusion and diversity of practice is for the International Commission to use its Plenary Powers to suppress the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, thus clearing the way for the acceptance for the two species concerned of specific names, the interpretation of which is not open to any doubt. These names are : (a) *adspersus* Rathke, 1837, as published in the combination *Palaemon adspersus*, and (b) *elegans* Rathke, 1837, as published in the combination *Palaemon elegans*. The method proposed for dealing with this part of the present case is, it will be noted, exactly parallel with that recently adopted by the Commission in its *Opinion* 401, where it used its Plenary Powers (a) to suppress a generic name (*Colymbus* Linnaeus, 1758) in birds which had been completely prejudiced by divergent usage, and (b) thus to provide names (*Podiceps* Latham, 1787, and *Gavia* Forster, 1788) for the genera concerned, the interpretation of which was not open to any doubt.

3. The second of the subjects raised in the present application is concerned with the differences in practice which have arisen in the interpretation of the generic name *Palaemon* (a name commonly attributed to Fabricius, 1798, but in fact first published by Weber, 1795) as the result of differences of opinion among specialists as to the species to be accepted as the type species of the genus concerned. As regards this subject, which is discussed in detail in Part 2 of the present paper, I am of the opinion that in view of the substantial preponderance of the interpretation which, as I show, is the correct interpretation, there is no case for asking the Commission to use its Plenary Powers in this matter and that the correct course is to accept as the type species of *Palaemon* the species which is the type species under the *Règles*. It is at this point that the present subject becomes involved in that discussed in paragraph 2 above, for the nominal species which is under the *Règles* the type species of *Palaemon* Weber, 1795 (and also of its junior homonym *Palaemon* Fabricius, 1798) is *Cancer squilla* Linnaeus, 1758. Having attempted, as outlined in paragraph 2 above, to put an end to the confusion regarding the interpretation of the foregoing nominal species by suppressing the specific name *squilla* Linnaeus, it would clearly be to invite the continuance of confusion if that nominal species were to be retained as the type species of the genus *Palaemon* Weber. Accordingly, although for the reasons explained above I am of the opinion that the genus *Palaemon* ought to be interpreted in strict accordance with the *Règles*, I consider that consequentially with the suppression under the Plenary Powers of the specific name *squilla* Linnaeus, as recommended in paragraph 2 above, directions should be given by the Commission under the same Powers that the type species of *Palaemon* Weber be cited under the name *Palaemon adspersus* Rathke, 1837, and not under the name *Cancer squilla* Linnaeus, 1758, now proposed to be suppressed.

Part 1 The problem of the specific name "squilla" Linnaeus, 1758, as published in the combination "Cancer squilla"

4. In a revision of the prawns of the subfamily PALAEMONINAE I pointed out (Holthuis, 1950, *Siboga Exped.* 39 (a⁹) : 55, 56) that the specific name *squilla* Linnaeus (1758, *Syst. Nat.* (ed. 10) 1 : 632), as published in the combination *Cancer squilla*, has in the last half-century, been incorrectly applied by taxonomic carcinologists to the species, which Rathke (1837, *Mém. Acad. imp. Sci. Petersb.* 3(3/4) : 370) described under the name

Palaemon elegans. Actually, *Cancer squilla* proves to be identical with the species described by Rathke (1837, *Mém. Acad. imp. Sci. Petersb.* 3(3/4) : 368) as *Palaemon adpersus*. Accordingly I applied to the last-named species the name *Palaemon squilla* (L.) and used the name *Palaemon elegans* for the first-named species.

5. The late Dr. Robert Gurney, in correspondence with me, protested against this changing of names, which, in his opinion, would cause a serious confusion in carcinological nomenclature.

6. My arguments in favour of the change which I proposed are as follows:—

(a) In applying the specific name *squilla* to *Palaemon adpersus* Rathke we give this name to the species for which it was intended by Linnaeus. The use of the specific name *squilla* for any other species would mean an incorrect identification.

(b) The nomenclatorial confusion within the genus *Palaemon* was considerable, until Ortmann (1890, *Zool. Jahrb. Syst.* 5 : 521–524), Kemp (1910, *Sci. Inv. Fish. Br. Ire.* 1908 (1) : 127–132), and De Man (1915, *Tijdschr. Nederl. dierk. Ver.* (2) 14 : 115–177) brought order into this chaos, at least as far as the European species are concerned. The old records of *Palaemon squilla* might apply to almost any European species of the subfamily PALAEMONINAE. It is known with certainty that the specific name *squilla*, generally in combination with the generic name *Palaemon*, has been used (i) for the European PALAEMONINAE *Palaemon adpersus* Rathke, *P. elegans* Rathke, *P. longirostris* H. Milne Edw., *P. serratus* (Pennant) and *Palaemonetes varians* (Leach), (ii) for a species of HIPPOLYTIDAE and (iii) even for the Penaeid prawn *Sicyonia carinata* (Brünnich). We may agree, however, that since the close of the period 1890–1915 (in 1915 the position of *Palaemon longirostris* H. Milne Edw. was made clear for the first time) authors working seriously on the taxonomy of the European PALAEMONIDAE have adopted the nomenclature used by the three authors mentioned above, and have been followed by several non-taxonomists. Ortmann, Kemp, as well as De Man used the generic name *Leander* Desmarest, 1849 (*Ann. Soc. ent. France* (2) 7 : 92) for the genus in question, while all three also adopted the specific name *squilla* Linnaeus for *Palaemon elegans*. In modern literature therefore we find *Palaemon elegans* almost always indicated as *Leander squilla*. As now the change of *Leander* to *Palaemon* would coincide with that of *adpersus* to *squilla* and that of *squilla* to *elegans*, the confusion would be greatly diminished, since the use of the generic name would already have indicated the attitude of the author using any of the above names.

(c) The incorrect application of the specific name *squilla* to *Palaemon elegans* has led to incorrect statements in compilations such as Balss's (1926) treatment of the Crustacea Decapoda in Grimpe & Wagler's *Die Tierwelt der Nord- und Ostsee*, vol. 6, pt. 10h2, and Schellenberg's (1928) Crustacea Decapoda in *Die Tierwelt Deutschlands*, vol. 10. In these works the incorrect statement is made that *Leander squilla* (*Palaemon elegans*) occurs in the Baltic. In addition De Man (1915 : 127) states that *Leander squilla* originated from the Baltic area. As long as the specific name *squilla* continues to be given to *Palaemon elegans* this confusion is bound to endure, since the Baltic has been adopted by several authors as the type locality of *Cancer squilla* Linnaeus although *Palaemon elegans* does not occur in this sea.

7. Fabricius in his diagnosis of the genus *Palaemon*, which is the first diagnosis given for this genus, stated that the mandibular palp is three-jointed (Fabricius, 1798, *Suppl. Ent. syst.* : 379). In the genus *Palaemon*, however, I recognise two subgenera ; one is characterized by the presence of a three-jointed mandibular palp, the other has that palp two-jointed. If we were to follow the opinion put forward by Dr. Gurney, in applying the name *squilla* to *Palaemon elegans*, a species with a two-jointed mandibular palp would become the type species of a genus, which was originally described as having that palp three-jointed. This difficulty does not arise if we synonymize *Cancer squilla* with *Palaemon adspersus*.

8. I admit that the change proposed by myself in 1950 would cause some confusion in carcinological literature, but on the other hand I can see no valid reason for permitting the continued use of the name *squilla* for the species which should be known as *elegans*. It is clear that it is highly desirable that a decision be reached in this intricate problem, and that that decision should be accepted by all carcinologists. It is for this reason that this question is now laid before the International Commission on Zoological Nomenclature.

9. As far as I can see, there are three possible solutions to this question. These solutions are tabulated below as Solutions I, II, and III. In the following table the species concerned are termed Species "A" and "B" respectively. Species "A" is the form with the mandibular palp three-jointed (*Palaemon adspersus* of Rathke) ; Species "B" is the form with the two-jointed mandibular palp (*Palaemon elegans* of Rathke).

Species	Solution		
	I	II	III
"A"	<i>Palaemon adspersus</i>	<i>Palaemon squilla</i>	<i>Palaemon adspersus</i>
"B"	<i>Palaemon squilla</i>	<i>Palaemon elegans</i>	<i>Palaemon elegans</i>

10. **Solution 1** : If I am correctly informed, Solution I is, as far as the specific names are concerned, the solution advocated by Dr. Gurney. The advantage of this solution is that the name *squilla* would continue to be used as it has been the last fifty odd years. The disadvantages have already been discussed above. The first author who, as far as I can find, uses the specific name *squilla* Linnaeus for *Palaemon elegans* Rathke was Leach ([1816], *Malacostraca Podophthalmata Britanniae* : pl. 43 figs. 11-13). In order to validate the names advocated in this Solution, it would be necessary either (1) that *Cancer squilla* L. (1758) be synonymized by the Commission under its Plenary Powers with *Palaemon squilla* Leach, [1816], regardless of the information contained in the original description of *Cancer squilla* by Linnaeus, or (2) that the name *Palaemon squilla* Leach, [1816] be validated by suppressing all previous use of the specific name *squilla*. In the latter case the status of the type species of the genus *Palaemon* would have to be reconsidered.

11. **Solution II** : This Solution is the one which was suggested by myself in my 1950 paper. This solution is obtained by adhering strictly to the International Rules of Zoological Nomenclature. The advantage is that this

solution is the only correct one, unless the Plenary Powers of the Commission are used. Its disadvantage is that its adoption would cause some confusion with regard to the use of the specific name *squilla*.

12. **Solution III** : The advantage of Solution III is that there is no ambiguity whatsoever with regard to the names *adspersus* and *elegans*, for these names have always been used to indicate the species to which they were originally given. The disadvantage is that to obtain this solution, the name *squilla* of Linnaeus, which name is widely used in the literature, would have to be suppressed, in spite of the fact that the identity of the species described by Linnaeus can be determined from the data he gives in his description. Moreover *Cancer squilla* is the type species of the genus *Palaemon* Weber. This important aspect of the case is discussed in Part 2 of the present application.

13. Having re-examined the whole question as carefully as possible, I have come to the conclusion that the most practical and therefore the best course to adopt is that described above as Solution III, for it is the only course which will make an end to all confusion. I accordingly recommend that the Commission should use its Plenary Powers to suppress the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, for the purposes of the Law of Priority but not for those of the Law of Homonymy. The rejection of this old and well-known specific name is much to be regretted, it is true, but over the course of years this name has been employed for so many different species that, unless additional information is provided, it is impossible when reading a paper to determine what is the species intended when either the name *Palaemon squilla* or the name *Leander squilla* is employed. Thus in practice the disappearance of the name *squilla* Linnaeus will not on balance be a loss. On the contrary, it will be a positive advantage.

Part 2 The interpretation of the nominal genus " *Palaemon* " Weber, 1795

14. The object of the present Part of the application now submitted is (a) to place before the International Commission the difficulties which have arisen through the lack of uniformity which has marked, and still marks the use by carcinologists of the generic name *Palaemon* which, though first validly published by Weber in 1795, is often still commonly attributed to Fabricius, 1798, and (b) to make suggestions for the purpose of establishing order in the names used for this and allied genera.

15. The following are the original references to the generic names dealt with in this application :—

Palaemon Weber, 1795, *Nomencl. ent. Fabricii* : 94 (type species, by selection by Schmitt, 1926 (*Bull. amer. Mus. nat. Hist.* 53 : 66) : *Cancer squilla* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 632 (= *Palaemon adspersus* Rathke, 1837, *Mém. Acad. imp. Sci. St. Petersb.* (3(3/4) : 368)

Palaemon Fabricius, 1798, *Suppl. Ent. syst.* : 378, 402 (type species, by selection by Latreille, 1810 (*Consid. gén. Crust. Arachn. Ins.* : 422) : *Cancer squilla* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 632 (= *Palaemon adspersus* Rathke, 1837, *Mém. Acad. imp. Sci. St. Petersb.* (3(3/4) : 368)

Leander Desmarest (E.), 1849, *Ann. Soc. ent. France* (2) 7 : 92 (type species, by monotypy : *Leander erraticus* E. Desmarest, 1849, *Ann. Soc. ent. France* (2) 7 : 92 (= *Palaemon tenuicornis* Say, 1818, *J. Acad. nat. Sci. Philad.* 1 : 249)

Macrobrachium Bate, 1868, *Proc. zool. Soc. Lond.* **1868** : 363 (type species, by selection by Fowler, 1912 (*Ann. Rep. New Jersey State Mus.* **1911** : 558) : *Macrobrachium americanum* Bate, 1868, *Proc. zool. Soc. Lond.* **1868** : 363).

16. Among carcinologists there are two views as to the correct application of the generic names *Palaemon*, *Leander* and *Macrobrachium*. One of these opinions is shared by most American authors, the other by most Europeans. They may be tabulated as follows :—

Genus	American point of view	European point of view
" X "	<i>Palaemon</i> Weber, 1795 (type : <i>Cancer squilla</i> Linnaeus)	<i>Leander</i> E. Desmarest, 1849 (type : <i>Leander erraticus</i> Desmarest)
" Y "	<i>Macrobrachium</i> Bate, 1868 (type : <i>Macrobrachium americanum</i> Bate)	<i>Palaemon</i> Weber, 1795 (type : <i>Cancer carcinus</i> Linnaeus)

17. The essential point of this whole problem is that the two groups of workers adopt a different species as the type species of the genus *Palaemon*. According to the American point of view *Cancer squilla* Linnaeus is the type species of the genus *Palaemon* Fabricius, while most European authors consider *Cancer carcinus* Linnaeus, 1758, to be the type species of that genus. Practically all the discussions which have been held concerning the present problem were held, it must be noted, in a time that Fabricius, 1798, was considered the author of the genus *Palaemon*.

18. Rathbun in 1897 (*Ann. Inst. Jamaica* **1**(1) : 45) showed that Latreille (1810) was the first to draw attention to the selection of *Cancer squilla* Linnaeus as the type species of *Palaemon* Fabricius. Latreille's action proves to have been perfectly valid (cf. in this connection *Opinions* 11 and 136). Subsequent type selections for *Palaemon* Fabricius are as follows :—

Astacus serratus Pennant, 1777 (*Brit. Zool.* ed. 4, **4** : 19) selected by Milne Edwards (H.), 1837, *Cuvier's Règne Anim.* (ed. 4) (Disciples' Ed.) **18** : pl. 54, fig. 1

Cancer squilla Linnaeus, 1758 (*Syst. Nat.* (ed. 10) **1** : 632) selected by Kingsley, 1879, *Proc. Acad. nat. Sci. Philad.* **1879** : 425

Cancer carcinus Linnaeus, 1758 (*Syst. Nat.* (ed. 10) **1** : 631) selected by Stebbing, 1893, *Hist. Crust.* : 246

Note : Stebbing stated that Stimpson, 1860, already selected *Cancer carcinus* as the type species of the genus *Palaemon*, but this statement was obviously a mistake. Stimpson, 1860 (*Proc. Acad. nat. Sci. Philad.* **1860** : 40, 41) did indeed divide the old genus *Palaemon* Fabricius into two genera *Leander* and *Palaemon*. He indicated *Palaemon natator* H.M. Edwards (= *Leander erraticus* E. Desmarest) as the type species of *Leander*, but no type species was given by him for *Palaemon*, though he placed in the latter genus such species as are at present inserted by American authors in the genus *Macrobrachium*.

It is thus perfectly clear that *Cancer squilla* Linnaeus and certainly not *Cancer carcinus* Linnaeus is the type species of the genus *Palaemon* Fabricius, 1798.

19. The decisions taken by the Thirteenth International Congress of Zoology held in Paris in 1948 have introduced a complication in the present case, for under one of those decisions (1950, *Bull. zool. Nomencl.* 4 : 80) the generic name *Palaemon* Fabricius, 1798, is antedated by the generic name *Palaemon* Weber, 1795. Under the *Règles* as interpreted by *Opinion* 1, Weber's name had previously been invalid, since it has not been published with a definition or a description, while no type species was indicated by Weber among the species which he listed under the name *Palaemon*. Under the provision approved in Paris, however, the name *Palaemon* Weber is valid through the fact that Weber listed under this generic name the specific names of certain species, which had already been validly published before 1795. *Palaemon* Weber, 1795, and *Palaemon* Fabricius, 1798, from a nomenclatorial viewpoint are different genera, notwithstanding the fact that they included at the time of their original publication practically the same species (the only difference being that *Astacus locusta* Fabricius which was placed by Fabricius in his genus *Palaemon* was considered by Weber to be a *species incerta*). A type selection for *Palaemon* Fabricius thus is not valid for *Palaemon* Weber. Therefore the type selections for *Palaemon* Fabricius discussed in paragraph 18 above are entirely worthless now that *Palaemon* Weber is to be accepted as a valid name. The only type selection for the genus *Palaemon* Weber known to me is that by Schmitt (1926), who selected *Cancer squilla* L. as the type species of Weber's genus. *Palaemon* Weber, 1795, and *Palaemon* Fabricius, 1798, thus not only are homonyms, but also objective synonyms of one another since they have the same type species, namely *Cancer squilla* Linnaeus, 1758. The revision of the *Règles* discussed above consequently has no influence on this problem.

20. We thus have ascertained that the American point of view nomenclatorially is the correct one, and that the names used by the European carcinologists can only be employed if they are validated by the International Commission under its Plenary Powers. In my opinion the use of those Powers in the present case would not be justified. The grounds on which I hold this view are set out below.

(1) Recently I pointed out (Holthuis, 1950, *Siboga Exped.* 39(a⁹) : 3-5) that *Palaemon tenuicornis* Say, 1818, and two closely related species constitute a separate genus distinct from the other species of the genus *Palaemon* (American sense). This conclusion is supported by Gurney's (1938, *Sci. Rep. Gt. Barrier Reef Exped.* 6(1) : 15) studies on larval forms. *Palaemon tenuicornis* is a senior subjective synonym of *Leander erraticus* Desmarest (E.), 1849, the type species of the genus *Leander* Desmarest. Consequently it is necessary to apply the generic name *Leander* Desmarest to the above mentioned group of three species. If the American point of view were to be accepted, this splitting of the genus *Palaemon* would cause no nomenclatorial problems, for the names *Leander* and *Palaemon* would then exist side by side. If the nomenclature adopted by the European specialists were to be followed, however, the genus *Leander* would be restricted to the above mentioned group of three species, while for far the larger part of the old genus a new generic name would be needed.

(2) In trying to build up a bibliography of the macrurous Decapod Crustacea, I brought together for each species of this group all the references which I could find in literature. These lists still are incomplete, but they certainly are sufficiently complete to give an impression of the relative frequency with which the names concerned are used. I have

counted in this bibliography the number of times that the generic names *Leander* and *Palaemon* have been used for European species of the genus *Palaemon* (American sense). As a result I have found that the name *Leander* has been used 184 times, while *Palaemon* has been employed not less than 323 times. This large difference is of course partly due to the fact that during the period when the genus *Macrobrachium* was not considered to be distinct from *Palaemon* (both names being used here in the American sense) the name *Palaemon* was used for the whole. We may confidently say, however, though the foremost European carcinologists of the XXth century such as Balss, Calman, Gurney, Kemp, De Man and Sollaud, used the name *Leander* for the genus which should be called *Palaemon*, the change back to *Palaemon* would not constitute an undue shock to the stability of the nomenclature of the European Decapods.

(3) In non-taxonomic literature the generic name *Palaemon* is often used in the American sense. Thus Balss, 1927 (In Kükenthal & Krumbach's *Handbuch der Zoologie* 3(1) : 1002) remarks : "*bei den in der physiologischen Literatur als 'Palaemon' erwähnten Versuchstieren handelt es sich immer um Leander-Arten*".

(4) Concerning *Macrobrachium* it is the case that for this genus the name *Palaemon* has been mostly commonly used. The genus does not occur in European waters, so that the literature concerning it is much smaller than that on *Palaemon* (American sense). In American literature the name *Macrobrachium* is now generally adopted and is found even in popular and fisheries papers. Only seven authors have worked in the last thirty years on *Macrobrachium* species of West Africa, four of these used the generic name *Palaemon* for this genus, the other three adopted *Macrobrachium*. In the Indo-West-Pacific Region up till 1950 *Palaemon* was the name commonly employed for the genus *Macrobrachium*, only a few authors using the latter name. In 1950 the present author published a revision of the species of this genus occurring in the foregoing Region and adopted the name *Macrobrachium* for it.

21. To sum up, it must be noted (1) that not even the use of the Plenary Powers could save the generic name *Leander* for use for most of those species for which that name has been employed by European authors, (2) that the name *Palaemon* has been more generally used for the European forms of this genus than the name *Leander*, especially in non-taxonomic papers, (3) that the preference for the name *Palaemon* for the genus *Macrobrachium* in recent Indo-West-Pacific literature is completely balanced by the preference for the name *Macrobrachium* for this genus in American literature, (4) that in recent revisions of the species of the genus *Macrobrachium* from the foregoing area and from West Africa the name *Macrobrachium* has been employed.

22. For the reasons summarised above I can see no reason at all for asking the Commission to use its Plenary Powers to substitute as the type species of the genus *Palaemon* some taxon other than that which is the type species under the *Règles*, namely the taxon to which the name *Cancer squilla* Linnaeus, 1758, properly applies. For the reasons set out in Part I of the present application I have, however, regretfully come to the conclusion that the specific name *squilla* Linnaeus has been so severely compromised by discordant usage extending over many years that it has lost all practical utility and therefore that clarity and uniformity in nomenclature would be unobtainable so long as

that name were to retain the status of availability. I have therefore recommended (paragraph 13 above) that, in order to put an end to the present state of confusion the Commission should use its Plenary Powers to suppress the specific name *squilla* Linnaeus, thereby rendering available for the species concerned the specific name *adpersus* Rathke, 1837 (as published in the combination *Palaemon adpersus*), a name which is entirely free from ambiguity and which has never been used in any but the correct sense. Having taken this step in the interest of nomenclatorial stability it would, however, be most unrealistic to permit the name *squilla* Linnaeus to linger on as the name of the nominal species to be accepted for the purposes of Article 30 as the type species of the genus *Palaemon* Weber, for to do so would be to invite the continuance of the state of confusion, which the proposed suppression of the specific name *squilla* Linnaeus is designed to bring to an end. Accordingly, I ask that, as part of the proposal for the suppression of the specific name *squilla* Linnaeus under the Plenary Powers the Commission should use those Powers also to direct that the name to be cited for the purposes of Article 30 as that of the type species of the genus *Palaemon* Weber shall be *Palaemon adpersus* Rathke, 1837, and not its senior subjective synonym *Cancer squilla* Linnaeus, 1758, the specific component of which is, it is proposed, now to be suppressed. The generic and specific names involved in the present case should be placed on the *Official Lists* concerned in those cases where it has been shown that they are the oldest available names for the taxa concerned and on the appropriate *Official Indexes* where the names in question are objectively invalid. At the family-group-name level the name PALAEMONIDAE (correction of PALEMONIA) Rafinesque, 1815 (*Analyse Nature* : 98) should be placed on the *Official List of Family-Group Names in Zoology*. In addition, the Invalid Original Spelling PALEMONIA Rafinesque, 1815 (which was corrected to the proper form by Samouelle in 1819 (*Entom. useful Compendium* : 96) should be placed on the *Official Index*, together with the Erroneous Subsequent Spelling PALEMONIDAE Randall, 1839 (*J. Acad. nat. Sci. Philad.* 8 : 141).

Part 3 : Recommendations

23. The concrete proposals which I now place before the International Commission on Zoological Nomenclature are that it should :—

(1) use its Plenary Powers :—

- (a) to suppress the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, for the purposes of the Law of Priority but not for those of the Law of Homonymy ;
- (b) to direct that the genus *Palaemon* Weber, 1795, shall be cited as having as its type species the nominal species *Palaemon adpersus* Rathke, 1837, and not the nominal species *Cancer squilla* Linnaeus, 1758 (a nominal species, the specific name of which is recommended in (a) above to be suppressed under the Plenary Powers) ;

(2) place the under-mentioned generic names on the *Official List of Generic Names in Zoology* :—

- (a) *Palaemon* Weber, 1795 (gender : masculine) (type species, by the direction given under the Plenary Powers in (1)(b) following the selection of *Cancer squilla* Linnaeus, 1758, by Schmitt (W.L.) (1926) : *Palaemon adpersus* Rathke, 1837) ;

- (b) *Leander* Desmarest (E.), 1849 (gender : masculine) (type species, by monotypy : *Leander erraticus* Desmarest (E.), 1849) ;
 - (c) *Macrobrachium* Bate, 1868 (gender : neuter) (type species, by selection by Fowler (1912) : *Macrobrachium americanum* Bate, 1868) ;
- (3) place the under-mentioned specific names on the *Official List of Specific Names in Zoology* :—
- (a) *adpersus* Rathke, 1837, as published in the combination *Palaemon adpersus* (specific name of type species of *Palaemon* Weber, 1795) ;
 - (b) *tenuicornis* Say, 1818, as published in the combination *Palaemon tenuicornis* ;
 - (c) *americanum* Bate, 1868, as published in the combination *Macrobrachium americanum* (specific name of type species of *Macrobrachium* Bate, 1868) ;
 - (d) *elegans* Rathke, 1837, as published in the combination *Palaemon elegans* ;
- (4) place the under-mentioned generic names on the *Official Index of Rejected and Invalid Generic Names in Zoology* :—
- (a) *Palaemon* Fabricius, 1798 (a junior homonym of, and a junior objective synonym of, *Palaemon* Weber, 1795) ;
 - (b) *Palemon* Duméril, [1805] (an Invalid Emendation of *Palaemon* Fabricius, 1798) ;
- (5) place the under-mentioned specific name on the *Official Index of Rejected and Invalid Specific Names in Zoology* :—
- squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, as suppressed under the Plenary Powers in (1)(a) above ;
- (6) place the under-mentioned family-group name on the *Official List of Family-Group Names in Zoology* :—
- PALAEMONIDAE (correction of PALEMONIA) Rafinesque, 1815 (type genus : *Palaemon* Weber, 1795) ;
- (7) place the under-mentioned family-group names on the *Official Index of Rejected and Invalid Family-Group Names in Zoology* :—
- (a) PALEMONIA Rafinesque, 1815 (an Invalid Original Spelling for PALAEMONIDAE) ;
 - (b) PALEMONIDAE Randall, 1839 (an Erroneous Subsequent Spelling FOR PALAEMONIDAE).

II. THE SUBSEQUENT HISTORY OF THE CASE

2. Registration of the present application : Upon the receipt in 1950 of Dr. Holthuis' preliminary communication, the question of the future status of the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, and of that of certain associated names was allotted the Registered Number Z.N.(S.)446. When in 1952 Dr. Holthuis submitted separate applications, of which one dealt with the case of the specific name

squilla Linnaeus, 1758, and the other with the relationship of the generic names *Leander*, *Palaemon* and *Macrobrachium*, the Registered Number Z.N.(S.)446 was retained for the first of these cases, the new Number Z.N.(S.)628 being allotted to the question of the relationship of the generic names cited above. Following the decision taken at the close of 1957 to deal with all the above names in a single application the documents relating to them were united under the Number Z.N.(S.)446, the File Z.N.(S.)628 being at the same time closed.

3. Publication of the present application : The present application was sent to the printer on 8th February 1957 and was published on 6th May of the same year in Part 5 of Volume 13 of the *Bulletin of Zoological Nomenclature* (Holthuis (L.B.), 1957, *Bull. zool. Nomencl.* 13 : 142-153).

4. Issue of Public Notices in May 1957 : Under the revised procedure prescribed by the Thirteenth International Congress of Zoology, Paris, 1948 (1950, *Bull. zool. Nomencl.* 4 : 51-56), Public Notice of the possible use by the International Commission on Zoological Nomenclature of its Plenary Powers in the present case was given on 6th May 1957 (a) in Part 5 of Volume 13 of the *Bulletin of Zoological Nomenclature* (the Part in which Dr. Holthuis' application was published) and (b) to the other prescribed serial publications. In addition, such Notice was given also to four general zoological serial publications.

5. Receipt in June 1957 of a Supplementary Application from L. B. Holthuis : On 20th June 1957 Dr. L. B. Holthuis informed the Office of the Commission that to his regret he had to report that since the submission of the present application the existence of a hitherto completely overlooked senior subjective synonym of one of the specific names involved in the present case had come to light, as had also that of two ancient *nomina dubia*, each of which constituted a potential threat to another of the specific names involved in this case. In the circumstances the only practicable course was for a supplementary application dealing with these matters to be submitted by Dr. Holthuis and published in the *Bulletin of Zoological Nomenclature*. The requisite document, which was as follows, was quickly prepared and was published on 30th September 1957 (Holthuis, 1957, *Bull. zool. Nomencl.* 13 : 294-296) :—

Supplementary action under the Plenary Powers recommended for the purpose of securing that the name “*Palaemon adspersus*” Rathke, 1837 (Class Crustacea, Order Decapoda) shall be the oldest available name for the taxon in question

By L. B. HOLTHUIS

(*Rijksmuseum van Natuurlijke Historie, Leiden, The Netherlands*)

I much regret to have to report that since the preparation of the application which I submitted to the International Commission on Zoological Nomenclature for the use of the Plenary Powers to suppress the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, and matters incidental thereto (1957, *Bull. zool. Nomencl.* 13 : 142-153) certain additional information has come to light which makes it necessary to amplify in some respects the application previously submitted.

2. First, it is necessary to note that in 1826 (*Natuurk. Verhand. Hollandsche Mij. Wetensch.* **15** : 262) Ansljñ in the introduction to a paper in Dutch concerning the Insecta of the Netherlands introduced (: 1) in a rather casual way the new name *Palaemon communis* as a substitute for the name *Cancer squilla* Linnaeus, 1758. I have been quite unable to trace any later use of this name or even to find a reference to its existence in the literature either in Sherborn's *Index Animalium* or elsewhere. The name *Palaemon communis* Ansljñ has priority over the name *Palaemon adspersus* Rathke, 1837, and, unless supplementary action is taken by the Commission, would replace that name if in response to the application already submitted the Commission were to suppress the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*. In my earlier application I have explained how important it is to put an end to the confusion and diversity of practice which has grown up in the matter of the name to be used for this prawn and have recommended that order should be restored by the Commission taking action to secure that the specific name *adspersus* Rathke—a name which is well understood by all carcinologists and as to which no difficulties of interpretation exist—shall be the oldest available name for this important species. The introduction of the totally unknown specific name *communis* Ansljñ for this species would inevitably usher in a new era of confusion and would, in my view, be totally at variance with modern ideas as to the need for avoiding objectionable name-changing. I therefore now supplement my previous application by asking that the specific name *communis* Ansljñ, 1826, as published in the combination *Palaemon communis*, be suppressed under the Plenary Powers for the purposes of the Law of Priority but not for those of the Law of Homonymy.

3. Second, it is necessary to draw attention to two ancient *nomina dubia* which represent a potential threat to the stability of the specific name *tenuicornis* Say, 1818, as published in the combination *Palaemon tenuicornis*, another of the names which in my earlier application I asked should be protected by being placed on the *Official List of Specific Names in Zoology*. The *nomina dubia* here in question are :—

Penaeus punctatissimus Bosc, [1801–1802], in Castel (R.R.), Suite à Buffon, *Hist. nat. Crust.* **2** : 109, pl. 14, fig. 3

Penaeus adspersus Tilesius, 1818, *Neue Ann. Wetterau. Ges. Naturk.* **1**(1) : 4, pl. 21a, fig. 1

4. The descriptions and figures given by Bosc and Tilesius respectively have been discussed in some detail in a paper by myself published in 1952 (*Occ. Pap. Allan Hancock Found.* **12** : 166, 167). In each case both description and figure are extremely poor and cannot be assigned with certainty to any known species, though they show some resemblance to the species now known as *Leander tenuicornis* (Say, 1818). Neither of these *nomina dubia* serves any useful purpose and it is accordingly recommended that both of these names should now be suppressed by the Commission under its Plenary Powers for the purposes of the Law of Priority, though not for those of the Law of Homonymy.

5. Finally, the present opportunity may conveniently be taken to draw attention to the name *Astacus locusta* Fabricius (J.C.), 1781 (*Spec. Ins.* **1** : 513), a name which was not mentioned in my earlier application. This name is a senior subjective synonym of *Palaemon tenuicornis* Say, 1818, discussed above, but it cannot be used for that species, for that name is invalid in the genus

Astacus, where it is a junior secondary homonym of *Astacus locusta* (Linnaeus, 1758) (= *Cancer locusta* Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 634) through the action of Pennant (1777, *Brit. Zool.* (ed. 4) 4 : 21) in transferring *locusta* Linnaeus to the genus *Astacus*. The specific name *locusta* Linnaeus is the valid name for the species concerned, which is currently placed in the genus *Gammarus* Fabricius, 1775. In order to complete the action required in this case, (i) the specific name *locusta* Fabricius, 1781, as published in the combination *Astacus locusta*, should be placed on the *Official Index of Rejected and Invalid Specific Names in Zoology* with a note that it is invalid for the reason explained above, and (ii) the specific name *locusta* Linnaeus, 1758, as published in the combination *Cancer locusta*, should be placed on the *Official List of Specific Names in Zoology*.

6. The concrete proposals which I now submit and which I regret were not included among the recommendations previously submitted are that the International Commission on Zoological Nomenclature, when taking its decision on my earlier application, should in addition :—

(1) use its Plenary Powers to suppress the under-mentioned specific names for the purposes of the Law of Priority but not for those of the Law of Homonymy :—

(a) *communis* Anslijn, 1826, as published in the combination *Palaemon communis* ;

(b) *adspersus* Tilesius, 1818, as published in the combination *Penaeus adspersus* ;

(c) *punctatissimus* Bosc, [1801–1802], as published in the combination *Penaeus punctatissimus* ;

(2) place the under-mentioned specific names on the *Official Index of Rejected and Invalid Specific Names in Zoology* :—

(a) the three specific names specified in (1) above, as there proposed to be suppressed under the Plenary Powers ;

(b) *locusta* Fabricius (J.C.), 1781, as published in the combination *Astacus locusta* (invalid, because a junior secondary homonym of *locusta* Linnaeus, 1758, as published in the combination *Cancer locusta*, through the action of Pennant (1777) in transferring that species to the genus *Astacus*) ;

(3) place the under-mentioned specific name on the *Official List of Specific Names in Zoology* :—

locusta Linnaeus, 1758, as published in the combination *Cancer locusta*.

6. Issue of Supplementary Public Notices in September 1957 : Concurrently with the publication on 30th September 1957 of the Supplementary Application reproduced in the immediately preceding paragraph, Public Notices supplementary to those issued on 6th May 1957 were issued in the prescribed manner, these Supplementary Notices covering the possible use by the Commission of its Plenary Powers in respect of those matters specified in Point (1) in the last paragraph of the Supplementary Application.

7. Extension to 30th March 1958 of the Prescribed Waiting Period in respect of the Principal Application in the present case : On 30th September 1957 Mr. Hemming, as Secretary, executed a Minute extending from 6th November 1957 to 30th March 1958 the Prescribed Waiting Period in respect of the Principal Application in the present case, thereby securing that the Prescribed Waiting Period in respect of the Principal Application and that in respect of the Supplementary Application should expire on the same day.

8. Comments Received : The publication of the Present application and the issue of Public Notices in regard thereto elicited comments from two specialists (New Zealand, one ; India, one). Of these, the first gave strong support for the action proposed, while the second expressed himself as being opposed to that action. The documents so received are reproduced in the immediately following paragraphs.

9. Support received from J. C. Yaldwyn : On 5th February 1958 Mr. J. C. Yaldwyn (*Victoria University of Wellington, Zoology Department, Wellington, New Zealand*) intimated as follows his support for the present application :—

I fully agree with Holthuis' proposal on the *Leander-Palaemon* and *squilla-adspersus* problems, and also his later proposal (*Bull. zool. Nomencl.*, vol. 13, pp. 294–296) on the suppression of the totally overlooked *Palaemon communis*. I have no other comment to add except to say that I think his ideas are the only ones we can possibly accept now, and in fact I think until we do accept them there will be no stability at all in this common genus.

10. Objection received from K. K. Tiwari : On 15th March 1958 Dr. K. K. Tiwari (*Zoological Survey of India, Crustacea Section, Calcutta, India*) addressed the following letter to the Office of the Commission in opposition to the proposals submitted in this case :—

The application made by Dr. Holthuis is very opportune, as it clearly brings out the nomenclatorial confusion prevalent with regard to some economically important genera of decapod crustaceans with a world wide distribution. A clear-cut decision by the Commission on this matter will be most welcome, and helpful to workers in different parts of the world, especially in the countries of the middle and far east.

2. I do not, however, agree with the recommendation made by Dr. Holthuis in Part I of his application. Obviously the specific name *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla*, is valid according to the Rules, and the species to which this name applies, namely, *Palaemon adspersus* Rathke, 1837, is easily identifiable without creating any confusion. Therefore, in spite of the fact that the name *squilla* has been variously, though mistakenly, applied to more than one species and genus of Decapoda Crustacea, it neither loses its validity nor scientific accuracy. Undoubtedly, defective identifications have caused considerable confusion with regard to the use of this name. This, however, is not sufficient ground to invoke the use of the Plenary Powers to suppress this name, which is otherwise quite valid according to the Rules, and can be used without ambiguity for the species for which Linnaeus intended it.

3. I, therefore, suggest that solution II given by Dr. Holthuis in para. 9 of Part I of his application be accepted as the correct situation. Adoption

of this solution will render unnecessary the use of the Plenary Powers of the Commission to suppress a valid specific name. The confusion feared by Dr. Holthuis, if this solution is adopted, can be easily avoided if the carcinologists are a little more careful.

4. The situation dealt with by Dr. Holthuis in Part 2 of his application is now achieving a state of stability in so far as usage is concerned. Unfortunately interpretation of the decisions taken by the Thirteenth International Congress of Zoology held in Paris in 1948 has introduced a fresh element of complication, though luckily it is not more than of an academic nature at its worst. This complication upsets the validity of the generic name *Palaemon* Fabricius, 1798, universally accepted in carcinological literature. The Paris decisions validate the name *Palaemon* Weber, 1795, which was until now invalid under the Rules as interpreted by *Opinion* 1. As the names *Palaemon* Weber, 1795, and *Palaemon* Fabricius, 1798, are used for the same genus, and as the same type species, namely *Cancer squilla* Linnaeus, 1758, has been designated for both, *Palaemon* Fabricius, 1798, becomes not only a homonym, but also an objective synonym of *Palaemon* Weber, 1795. Under these circumstances no special ruling by the Commission is necessary as the name *Palaemon* Weber, 1795, automatically becomes valid following the Paris decisions of the Congress.

5. The history of the usage and varying interpretations of the generic names *Palaemon*, *Leander* and *Macrobrachium* has been ably summarised by Dr. Holthuis in Part 2 of his application. After the publication of his monograph on PALAEMONINAE (Holthuis, 1950, *Siboga Exped.* 39(a⁹)) and his subsequent papers, the precise biological limits of these genera are more or less correctly fixed for the time being, and with few exceptions carcinologists are now using these names in the same sense in which Dr. Holthuis has used them. The purpose of the present application, is, thus, to clarify and fix the correct status of these names, so that the discordant usage, which has caused so much confusion in carcinological literature with regard to the interpretation of these names, is finally corrected once for all.

6. On the basis of the comments made above, I make the following suggestions :

- (i) It is not necessary to use the Plenary Powers to suppress the specific name *squilla* Linnaeus, 1758, as used in the combination *Cancer squilla* Linnaeus.
- (ii) The generic name *Palaemon* Weber, 1795, be placed on the *Official List, of Generic Names in Zoology*, with *Cancer squilla* Linnaeus, 1758, as its type species following the designation by Schmitt, W.L. (1926). This is the correct position as indicated by Dr. Holthuis in solution II, para. 9 of Part 1 of his application. Thus *Palaemon adspersus* Rathke, 1837, becomes a synonym of *Palaemon squilla* (Linnaeus) and *Palaemon elegans* Rathke, 1837, retains its biological limits as fixed by Rathke.
- (iii) Other recommendations made by Dr. Holthuis may be adopted as they are except that the specific name *adspersus* Rathke, 1837, as published in combination with *Palaemon adspersus*, need not be cited as the specific name of the type species of *Palaemon* Weber, 1795.

7. I, therefore, propose the following amendments to be made in the proposals placed by Dr. Holthuis before the Commission in Part 3 of his applications :

- (a) Proposal 1(a) and (b) to be dropped ;
- (b) Proposal 2(a) to be substituted by the following : *Palaemon* Weber, 1795 (gender : masculine) (type species, by selection by Schmitt, W.L. (1926) : *Cancer squilla* Linnaeus, 1758) ;
- (c) Substitute proposal 3(a) by : *squilla* Linnaeus, 1758, as published in the combination *Cancer squilla* (specific name of type species of *Palaemon* Weber, 1795) ;
- (d) Delete Proposal 5.

III. THE DECISION TAKEN BY THE INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

11. Issue of Voting Paper V.P.(58)9 : On 3rd April 1958 a Voting Paper (V.P.(58)9) was issued in which the Members of the Commission were invited to vote either for, or against, " the proposal relating to the specific name *adspersus* Rathke, 1837 (*Palaemon*) and associated matters as set out in Points (1) to (7) in paragraph 23 on pages 151-153 of Volume 13 of the *Bulletin of Zoological Nomenclature* [i.e. in the Points numbered as above in the paper reproduced in the first paragraph of the present *Opinion*] and in Points (1) to (3) in paragraph 6 of the Supplementary Application published on pages 294-296 of the same volume of the *Bulletin* " [i.e. in the Points numbered as above in paragraph 6 of the paper reproduced in paragraph 5 of the present *Opinion*].

12. The Prescribed Waiting Period : As the foregoing Voting Paper was issued under the Three-Month Rule, the Prescribed Voting Period closed on 3rd July 1958.

13. Particulars of the Voting on Voting Paper V.P.(58)9 : At the close of the Prescribed Waiting Period, the state of the voting on Voting Paper V.P.(58)9 was as follows :—

- (a) *Affirmative Votes had been given by the following nineteen (19) Commissioners (arranged in the order in which Votes were received) :*

Holthuis ; Prantl ; Hering ; Vokes ; Lemche ; Boschma ; Bodenheimer ; Dymond ; Mayr ; Key¹ ; do Amaral ; Sylvester-Bradley ; Jaczewski ; Bradley (J.C.) ; Hemming ; Stoll ; Kühnelt ; Tortonese ; Riley ;

- (b) *Negative Votes, two (2) :*

Mertens ; Cabrera ;

- (c) *On Leave of Absence, one (1) :*

Miller ;

- (d) *Voting Papers not returned, two (2) :*

Bonnet ; Hankó.

¹ Save as regards Point (4)(a) in paragraph 23 of the application.

14. Declaration of Result of Vote : On 4th July 1958, Mr. Hemming, Secretary to the International Commission, acting as Returning Officer for the Vote taken on Voting Paper V.P.(58)9, signed a Certificate that the Votes cast were as set out in paragraph 13 above and declaring that the proposal submitted in the foregoing Voting Paper had been duly adopted and that the decision so taken was the decision of the International Commission in the matter aforesaid.

15. Preparation of the Ruling given in the present "Opinion" : On 5th July 1958, Mr. Hemming prepared the Ruling given in the present *Opinion* and at the same time signed a Certificate that the terms of that Ruling were in complete accord with those of the proposal approved by the International Commission in its Vote on Voting Paper V.P.(58)9.

16. Original References for Generic and Specific Names : The following are the original references for the generic and specific names placed on *Official Lists* and *Official Indexes* by the Ruling given in the present *Opinion* :

adpersus, *Penaeus*, Tilesius, 1818, *Neue Ann. Wetterau. Ges. Naturk.* 1(1) : 4, pl. 21a, fig. 1

adpersus, *Palaemon*, Rathke, 1837, *Mém. présentés Acad. imp. Sci. St. Petersb.* 3(3/4) : 368

americanum, *Macrobrachium*, Bate, 1868, *Proc. zool. Soc. Lond.* 1868 : 363

communis, *Palaemon*, Anslin, 1826, *Natuurk. Verhand. Hollandsche Mij. Wetensch.* 15 : 262

elegans, *Palaemon*, Rathke, 1837, *Mém. présentés Acad. imp. Sci. St. Petersb.* 3(3/4) : 370

Leander Desmarest (E.), 1849, *Ann. Soc. ent. France* (2)7 : 92

locusta, *Cancer*, Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 634

locusta, *Astacus*, Fabricius (J.C.), 1781, *Spec. Ins.* 1 : 513

Macrobrachium Bate, 1868, *Proc. zool. Soc. Lond.* 1868 : 363

Palaemon Weber, 1795, *Nomencl. ent. Fabricii* : 94

Palaemon Fabricius (J.C.), 1798, *Suppl. Ent. syst.* : 378, 402

Palaemon Duméril, [1805], *Zool. anal.* : 339

punctatissimus, *Penaeus*, Bosc, [1801-1802], in Castel (R.R.), *Suite à Buffon, Hist. nat. Crust.* 2 : 109, pl. 14, fig. 3

squilla, *Cancer*, Linnaeus, 1758, *Syst. Nat.* (ed. 10) 1 : 632

tenuicornis, *Palaemon*, Say, 1818, *J. Acad. nat. Sci. Philad.* 1 : 249

17. Reference for the selection of a type species for a nominal genus : The following is the reference for the selection of a type species for a nominal genus specified in the Ruling given in the present *Opinion* :—

For *Macrobrachium* Bate, 1868

Fowler, 1912, *Ann. Rep. New Jersey State Mus.* 1911 : 558

18. Original References for Family-Group Names : The following are the original references for the family-group names placed by the Ruling given in the present *Opinion* on the *Official List* or, as the case may be, on the *Official Index*, of names of taxa belonging to the family-group category :—

PALAEEMONIDAE (correction of PALEEMONIA) Rafinesque, 1815, *Analyse Nature* : 98
PALEEMONIA Rafinesque, 1815 (an Invalid Original Spelling for PALAEEMONIDAE)
PALEEMONIDAE Randall, 1839, *J. Acad. nat. Sci. Philad.* 8 : 141

19. Compliance with Prescribed Procedures : The prescribed procedures were duly complied with by the International Commission on Zoological Nomenclature in dealing with the present case, and the present *Opinion* is accordingly hereby rendered in the name of the said International Commission on Zoological Nomenclature, in virtue of all and every the powers conferred upon him in that behalf.

20. "Opinion" Number : The present *Opinion* shall be known as *Opinion* Five Hundred and Sixty-Four (564) of the International Commission on Zoological Nomenclature.

DONE in London, this Fifth day of July, Nineteen Hundred and Fifty-Eight.

*Secretary to the International Commission
on Zoological Nomenclature*

FRANCIS HEMMING